

CLAIMS

1. A solid state process for the production of fats or oils and/or their extracts containing biologically-active chemical compounds from a lipid substrate, the process comprising:

5 a) Inoculation of a lipid substrate with a fungal mixture having enzymatic activity, said fungal mixture being derived from said substrate,

b) Incubating the inoculated substrate for a period of between about 7-120 days at a temperature of between about 4-35°C, at a humidity of between about 75-100%, such that said fungal mixture metabolises/transforms the lipid substrate into said fats or oils and/or their extracts containing biologically-active chemical compounds, and

10 c) Processing said incubated substrate mixture to obtain a biologically active fat or oil.

2. A solid state process for the production of fats or oils and/or their extracts containing biologically-active chemical compounds from a lipid substrate, the process comprising:

15 a) Incubating the lipid substrate without any inoculation of a fungal mixture, for a period of between about 7-120 days at a temperature of between about 4-35°C, at a humidity of between about 75-100%, such that the lipid substrate transforms into said fats or oils and/or their extracts containing biologically-active chemical compounds, and

20 b) Processing said incubated substrate mixture to obtain a biologically active fat or oil.

3. The process according to claim 1 wherein in step b), the period of incubation is between about 7 to 56 days, at a temperature of between about 5-20°C and at a humidity of between about 80-100%.

25 4. The process according to claim 2 wherein in step a), the period of incubation is between about 7 to 56 days, at a temperature of between about 5-20°C and at a humidity of between about 80-100%.

5. The process according to claim 1 wherein in step c), the lipid substrate is animal-derived and said metabolised/transformed inoculated lipid substrate is rendered to obtain a biologically active oil.

30 6. The process according to claim 2 wherein in step b), the lipid substrate is animal-derived and said metabolised/transformed lipid substrate is rendered to obtain a biologically active oil.

7. The process according to claim 1, wherein in step c), the lipid substrate is plant or seed derived, and said biologically active oil is obtained by cold pressing or solvent extraction of said inoculated substrate mixture.

8. The process according to claim 2, wherein in step b), the lipid substrate is plant or seed derived, and said biologically active oil is obtained by cold pressing or solvent extraction of said substrate mixture.

9. The process according to claim 1 or claim 2 wherein a concentrated extract of a biologically active oil is prepared by solvent extraction of the obtained biologically active oil, using, methanol at low temperature.

10. A biologically active fat or oil and extracts thereof produced according to the process of any one of claims 1 to 9.

11. A method of treating or preventing a disease or condition in a human or animal patient, which comprises administration to the patient of an effective amount of a biologically active fat or oil or extract thereof, produced according to the process of any one of claims 1 to 9.

12. The method according to claim 11 wherein said administration is oral, transdermal or subcutaneous.

13. The method according to claim 11, wherein said condition is an inflammatory condition including musculo-skeletal disorders such as arthritis, rheumatoid arthritis and osteoarthritis.

14. The method according to claim 11, wherein said disease or condition is a gastrointestinal disorder, including inflammatory bowel diseases such as Crohn's disease and ulcerative colitis, gastric ulcers, gastric reflux and pancreatitis.

15. The method according to claim 11, wherein said disease is a respiratory disease, including asthma, and chronic obstructive pulmonary disease (COPD).

16. The method according to claim 11, wherein said disease is a cardiovascular disease, including atherosclerosis, coronary artery disease and hypertension.

17. The method according to claim 11, wherein said disease is a skin disease, including dermatitis, psoriasis and atopic eczema.

18. The method according to claim 11, wherein said disease or condition is cancer, including bowel cancer, skin cancer, breast cancer, prostate cancer and sarcoidosis and non-solid tumours such as Hodgkin's lymphoma.

19. The method according to claim 11, wherein said disease or condition includes leukemia, diabetes, allergies (e.g., otitis media, ocular allergy, uveitis), dysmenorrhoea,

kidney diseases (e.g., glomerulonephritis, nephrotic syndrome), benign prostate hyperplasia, septic shock.

20. The method according to claim 11, wherein pathogenesis of said disease or condition involves activation of the lipxygenase (LOX) pathways, including the 5-, 12- and 15- LOX pathways.

21. The method according to claim 11, wherein pathogenesis of said disease or condition involves activation of the of cyclo-oxygenase (COX) pathways, including COX-1 and COX-2 pathways.

22. The method according to claim 11, wherein pathogenesis of said disease or condition is characterised by an increase in blood C-reactive protein levels.

23. The method according to claim 11, wherein said biologically active fat or oil or extract thereof is topically administered in the form of a pharmaceutical cream, prepared with one or more acceptable carriers or diluents.

24. Use of a biologically active fat or oil and extracts thereof as claimed in claim 10 in the manufacture of a medicament for the treatment of an inflammatory disease or condition in a human or animal.

25. The use according to claim 24 where said biologically active fat or oil inhibits the lipxygenase (LOX) pathways, including the 5-, 12- and 15- LOX pathways.